Page Tools

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Arts

Business

Entertainment

Food

Government

Health

Legal

Leisure

Military

People

Reference

Religion

Science

Shopping

Sports

Travel

Words

Zoology

Results for embedded

Dictionary: embed (·m-b·d') also imbed (·m-)

v., **-bed·ded** also **-bed·ded, -bed·ding -bed·ding, -beds -beds.**

v.tr.

1. To fix firmly in a surrounding mass: *embed a post in concrete; fossils embedded in shale.*
2. To enclose snugly or firmly.
3. To cause to be an integral part of a surrounding whole: *"a minor accuracy embedded in a larger untruth"* (Ian Jack).
4. To assign (a journalist) to travel with a military unit during an armed conflict.
5. *Biology.* To enclose (a specimen) in a supporting material before sectioning for microscopic examination.

v.intr.

To become embedded: *The harpoon struck but did not embed.*

n. (·m'b·d')

One that is embedded, especially a journalist who is assigned to an active military unit.

embedment em·bed'ment *n.*

Computer Desktop Encyclopedia: embedded

Inserted into. See embedded system.

Thesaurus: embed
also imbed

verb

To implant so deeply as to make change nearly impossible: entrench, fasten, fix, infix, ingrain, lodge, root[1]. *See*move/halt.

Antonyms: embed

v

Definition: sink, implant
Antonyms: dig up

Dental Dictionary: embedded

adj

Referring to a tooth, root tip, or foreign body that is covered in bone.

Veterinary Dictionary: embedding

Fixation of tissue in a firm medium, in order to keep it intact during cutting of thin sections for pathological examination.

Wikipedia: embedding

For other uses of this term, see embedded (disambiguation).

In mathematics, an **embedding** (or **imbedding**) is one instance of some mathematical object contained within another instance, such as a group that is a subgroup.

Abstractly or categorically

An abstract **embedding** between two X, Y objects in a given category $\mathfrak{C}$, is a $\mathfrak{C}$-morphism $f:X \to Y$ which is a monomorphism.

Topology and Geometry

General topology

In general topology, an embedding is a homeomorphism onto its image. More explicitly, a map $f : X \to Y$ between topological spaces X and Y is an embedding if f yields a homeomorphism between X and $f(X)$ (where $f(X)$ carries the subspace topology inherited from Y). Intuitively then, the embedding $f : X \to Y$ lets us treat X as a subspace of Y. Every embedding is injective and continuous. Every map that is injective, continuous and either open or closed is an embedding; however there are also embeddings which are neither open nor closed. The latter happens if the image $f(X)$ is neither an open set nor a closed set in Y.

For a given space X, the existence of an embedding X → Y is a topological invariant of X. This allows two spaces to be distinguished if one is able to be embedded into a space which the other is not.

An embedding is **proper** if it behaves well w.r.t. boundaries: one requires the map $f:X\to Y$ to be such that

- $f(\partial X) = f(X)\cap\partial Y$, and
- $f(X)$ is transversal to ∂Y in any point of $f(\partial X)$.

The first condition is equivalent to having $f(\partial X) \subseteq \partial Y$ and $f(X \setminus \partial X) \subseteq Y \setminus \partial Y$. The second condition, roughly speaking, says that f(X) is not tangent to the boundary of Y.

Differential topology

In differential topology: Let M and N be smooth manifolds and $f:M\to N$ be a smooth map, it is called an immersion if the derivative of f is everywhere injective. Then an **embedding**, or a **smooth embedding**, is defined to be an immersion which is an embedding in the above sense (i.e. homeomorphism onto its image).

In other words, an embedding is diffeomorphic to its image, and in particular the image of an

embedding must be a submanifold. An immersion is a local embedding (i.e. for any point $x \in M$ there is a neighborhood $x \in U \subset M$ such that $f:U \to N$ is an embedding.)

When the manifold is compact, the notion of a smooth embedding is equivalent to that of an injective immersion.

An important case is $N=\mathbf{R}^n$. The interest here is in how large n must be, in terms of the dimension m of M. The Whitney embedding theorem states that $n = 2m$ is enough. For example the real projective plane of dimension 2 requires $n = 4$ for an embedding. An immersion of this surface is, however, possible in $\mathbf{R}^3$, and one example is Boy's surface—which has self-intersections. The Roman surface fails to be an immersion as it contains cross-caps.

Riemannian geometry

In Riemannian geometry: Let (M,g) and (N,h) be Riemannian manifolds. An **isometric embedding** is a smooth embedding $f : M \to N$ which preserves the metric in the sense that g is equal to the pullback of h by f, i.e. $g = f^*h$. Explicitly, for any two tangent vectors

$$v, w \in T_x(M)$$

we have

$$g(v, w) = h(df(v), df(w)).$$

Analogously, **isometric immersion** is an immersion between Riemannian manifolds which preserves the Riemannian metrics.

Equivalently, an isometric embedding (immersion) is a smooth embedding (immersion) which preserves length of curves (cf. Nash embedding theorem).

Algebra

In general, for a category *C*, an embedding between two *C*-algebraic structures *X* and *Y* is a *C*-morphism ***e***:*X*→*Y* which is injective.

Field theory

In field theory, an **embedding** of a field *E* in a field *F* is a ring homomorphism σ : *E* → *F*.

The kernel of σ is an ideal of *E* which cannot be the whole field *E*, because of the condition σ(1)=1. Furthermore, it is a well-known property of fields that their only ideals are the zero ideal and the whole field itself. Therefore, the kernel is 0, so any embedding of fields is a monomorphism. Moreover, *E* is isomorphic to the subfield σ(*E*) of *F*. This justifies the name *embedding* for an arbitrary homomorphism of fields.

Domain theory

In domain theory, an **embedding** of partial orders is *F* in the function space [X →Y] such that

1. $\forall x_1, x_2 \in X : x_1 \leq x_2 \Leftrightarrow F(x_1) \leq F(x_2)$ and
2. $\forall y \in Y : \{x : F(x) \leq y\}$ is directed.

Based on an article from FOLDOC, used by permission.

Metric spaces

A mapping $\phi:X\to Y$ of metric spaces is called an *embedding* (with distortion $C > 0$) if

$$Ld_X(x,y) \leq d_Y(\phi(x),\phi(y)) \leq CLd_X(x,y)$$

for some constant $L > 0$.

Normed spaces

An important special case is that of normed spaces; in this case it is natural to consider linear embeddings.

One of the basic questions that can be asked about a finite-dimensional normed space $(X, \|\cdot\|)$ is, *what is the maximal dimension k such that the Hilbert space ℓ_2^k can be linearly embedded into X with constant distortion?*

The answer is given by Dvoretzky's theorem.

Model theory

If L is a first order language and A,B are L-structures, then a map $\sigma:A\to B$ is an L-embedding iff all the following holds:

- σ is injective,
- for every n-ary function symbol $f \in L$ and $a_1,\ldots,a_n \in A^n$, we have $\sigma(f^A(a_1,\ldots,a_n)) = f^B(\sigma(a_1),\ldots,\sigma(a_n))$,
- for every n-ary relation symbol $R \in L$ and $a_1,\ldots,a_n \in A^n$, we have $A \models R(a_1,\ldots,a_n)$ iff $B \models R(\sigma(a_1),\ldots,\sigma(a_n))$,

- for every constant symbol $c \in L$, $\sigma(c^A) = c^B$.

See also

- Inclusion map

Translations: Embed

Dansk (Danish)
v. tr. - omslutte, indstøbe, omgive, fastholde, indlejre, indlægge
v. intr. - putte i seng, anbringe i et leje

idioms:

- **embedded command** indlejret kode
- **embedded in concrete** indstøbt i cement

Nederlands (Dutch)
omsluiten, inbedden, vastzetten

Français (French)
v. tr. - enfoncer (dans le bois), couler (dans le ciment), sceller (dans la pierre), enchâsser (un bijou), incruster, (Ling) enchâsser, (fig) être gravé dans
v. intr. - être enfoncé dans, être scellé (dans la pierre), être enchâssé (un bijou), être coulé (dans le ciment)

idioms:

- **embedded command** (Comput) commande intégrée
- **embedded in concrete** noyé dans le béton

Deutsch (German)
v. - einlassen

idioms:

- **embedded command** eingebettete Befehle
- **embedded in concrete** einzementieren

Ελληνικ• **(Greek)**
v. - χ•νω, θ•βω, εντοιχ•ζω, εμφυτε•ω

idioms:

- **embedded command** (Η/Υ) •νθετη εντολ•
- **embedded in concrete** τσιμενταρισμ•νος

Italiano (Italian)
incastrare, immergere

Português (Portuguese)
v. - embutir, encaixar, implantar

Русский **(Russian)**
вставлять, врезать, внедрять

Español (Spanish)
v. tr. - empotrar, clavar, hincar, meter, fijar
v. intr. - clavarse, hincarse

idioms:

- **embedded command** orden sobreentendida, orden incluida en otra
- **embedded in concrete** definitivo, reforzado con hormigón

Svenska (Swedish)
v. - bädda in, förankra, innesluta

中文 (简体) (Chinese (Simplified))
使插入, 深留, 使嵌入, 嵌入

idioms:

- embedded command 嵌入的命令
- embedded in concrete 在水泥中砌进

中文 (繁體) (Chinese (Traditional))
v. tr. - 使插入, 深留, 使嵌入
v. intr. - 嵌入

idioms:

- embedded command 嵌入的命令
- embedded in concrete 在水泥中砌進

한국어 (Korean)
v. tr. - 끼워 넣다 , 깊이 간직하다
v. intr. - 파묻히다

日本語 (Japanese)
v. - ぴったりとはめ込む, 植え込む, 深くとどめる, はまり込む, はめ込む, 埋める

••••••• (Arabic)
•(•••) ••••, •••• •••••••

••••• (Hebrew)
v. tr. - •••••, •••, •••, •••••
v. intr. - ••••••, •••• •••••••

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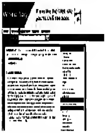
Best of the Web: embedded

Some good "embedded" pages on the web:



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Do you have the answers?

- Q: How can you build a humane mouse trap?
- Q: How much water loss by evaporation should be expected in a swimming pool with dimensions 18x36 in Alabama?

- What is the meaning of 'statutory liquidity ratio'?
- What is the average cost per square foot for building a house in Illinois?
- How many barrels of oil have been removed from the earth since 1846?